

**VIRGINIA  
STANDARDS OF LEARNING ASSESSMENTS**

**Spring 2004 Released Test**

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**GRADE 5  
SCIENCE  
CORE 1**

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**DIRECTIONS**

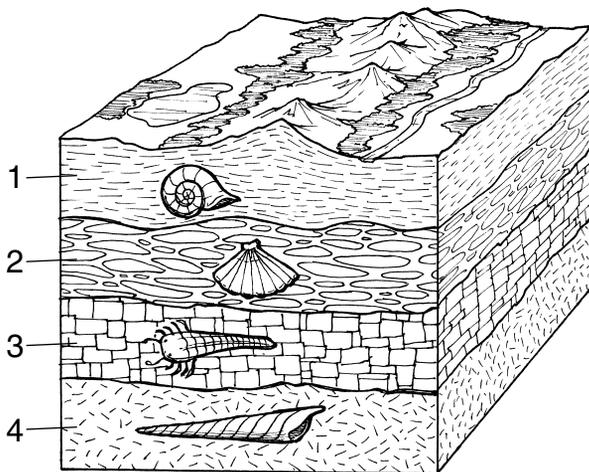
Read each question carefully and choose the best answer. Then mark the space in the answer booklet for the answer you have chosen.

**SAMPLE**

When the Earth is seen from outer space, it looks mainly blue. This is because most of the Earth is covered with —

- A ice
- B mountains
- C oceans
- D deserts

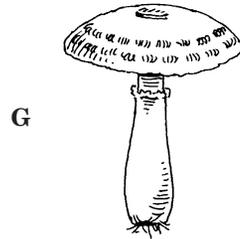
1



The diagram shows layers of sedimentary rocks and examples of their fossils. Which layer contains the oldest fossils?

- A 1
- B 2
- C 3
- D 4

2 Which of these is *not* a plant?



3 The energy used to move most bicycles is an example of what type of energy?

- A Electrical
- B Mechanical
- C Chemical
- D Nuclear

**4 How is a fish different from a jellyfish?**

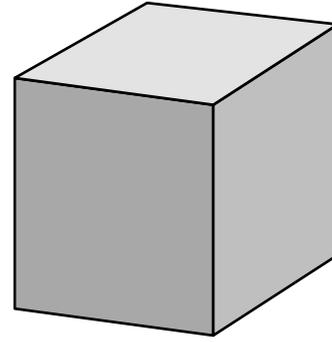
- F A fish has a backbone.
- G A fish is in the animal kingdom.
- H A fish can reproduce.
- J A fish lives in water.

**5** **Rain, Snow, Sleet**

**Which weather term best describes the words above?**

- A Humidity
- B Atmosphere
- C Precipitation
- D Barometric pressure

**6**



**Which tools would be needed to measure the size and the mass of a block of wood?**

- F A watch with a second hand and a ruler
- G A graduated cylinder and a thermometer
- H A ruler and a balance
- J A thermometer and a meter stick

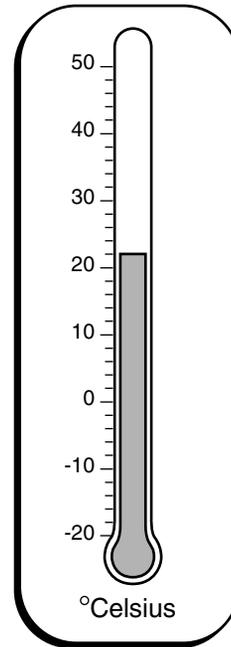
**7 Which causes rocks in a stream to be smooth?**

- A Weathering
- B Air currents
- C Earthquakes
- D Movement of fish

**8 During a thunderstorm, you see the lightning before you hear thunder. This is because —**

- F light has a greater mass than sound
- G sound has longer wavelengths than light
- H light travels faster than sound
- J sound and light travel at the same speed

**9**



**The picture shows a thermometer in a room. What is the temperature of this room?**

- A 19°C
- B 20°C
- C 21°C
- D 22°C

10 The black widow spider is common to Virginia's ledges, rocks, and plants. Why are these spiders important to the balance in nature?

- F They poison other animals.
- G They are harmless to people.
- H They eat plants.
- J They help control some insects.

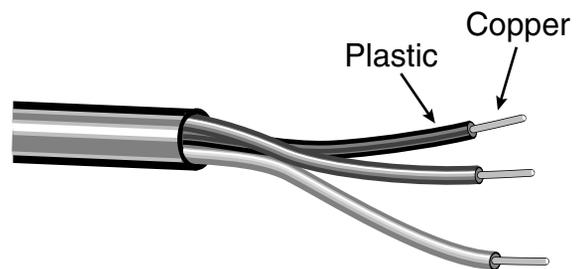
11 Over the period of one year, a rock wall shifted 15 millimeters. Which of these lines best shows the distance the wall moved?

- A 
- B 
- C 
- D 

12 What will happen if the lid is removed from a container that holds helium gas?

- F The gas will expand and escape from the container.
- G The gas will slowly change back into a liquid.
- H When light hits the gas, it will change colors.
- J Gravity will keep the gas in the container.

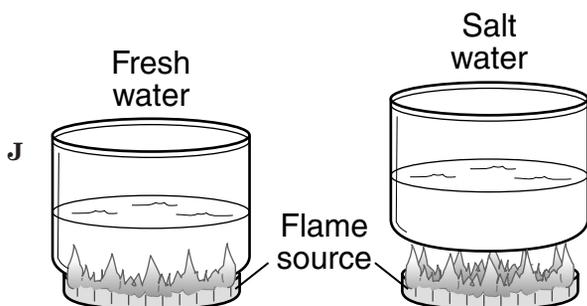
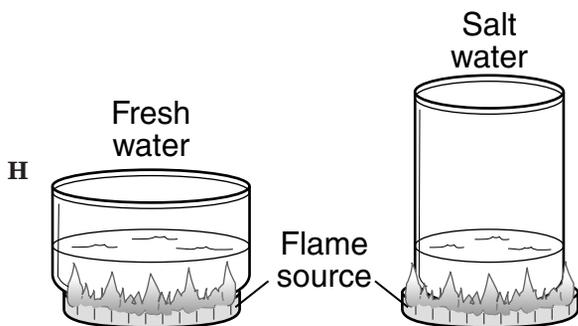
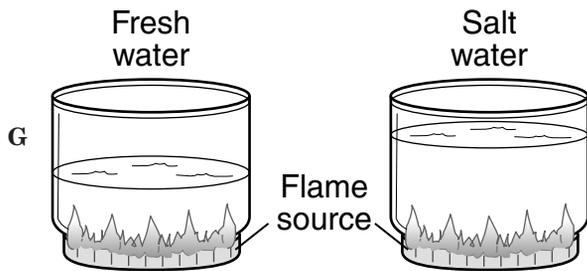
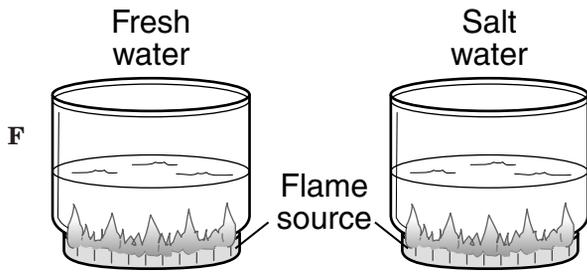
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Many electrical wires are wrapped with a plastic coating because plastic is —

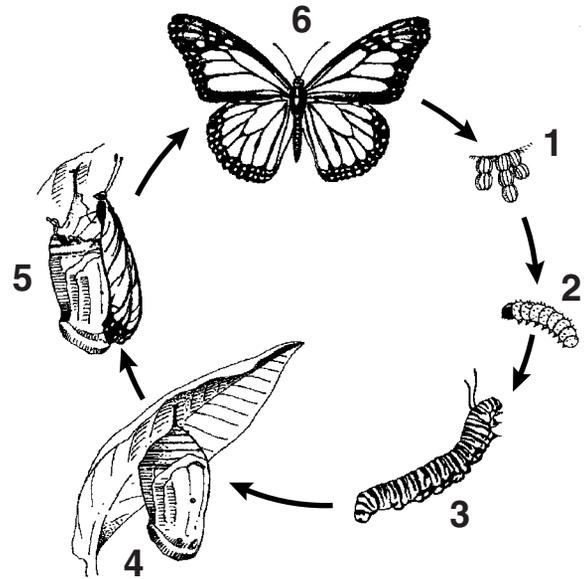
- A less expensive than steel
- B more dense than copper
- C able to keep its shape
- D a good insulator

14 Which is the *fairest* way to find out if salt water boils faster than fresh water?



15

### Butterfly Life Cycle



During certain stages of a butterfly's life cycle, the butterfly helps plants by pollinating their flowers. At other stages, it hurts plants by eating their leaves. At what stage in the butterfly's life cycle does it eat the *most* plant leaves?

- A 1
- B 2
- C 4
- D 6

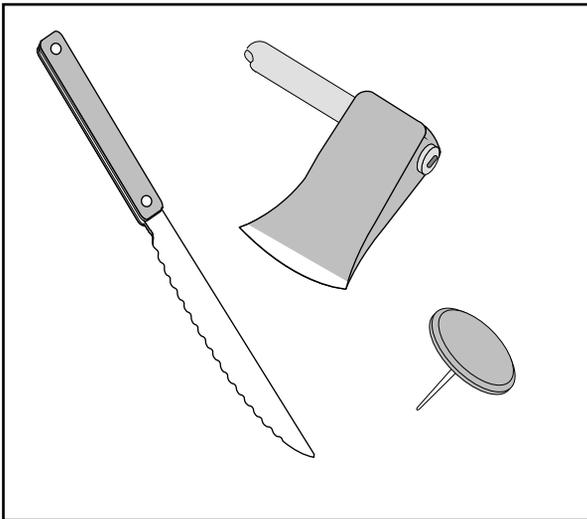
16 People put sugar in their tea to make it sweet. The sugar will dissolve fastest when the tea —

- F is hot
- G is cold
- H is in a tall glass
- J has lemon in it

**17 The ocean floor —**

- A is always a flat bed of sand
- B has mountains, plains, and ridges like land surfaces
- C is covered by the same amount of water everywhere
- D covers less area than the land

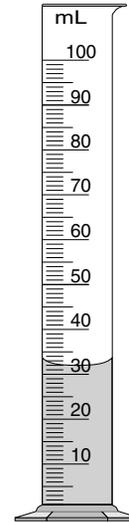
**18**



**Each of these simple machines contains a —**

- F wheel and axle
- G lever
- H pulley
- J wedge

**19**



**If 5 milliliters of vinegar are added to the water in the cylinder, what will be the total volume of the liquid?**

- A 30 milliliters
- B 27 milliliters
- C 37 milliliters
- D 35 milliliters

20 **Approximate Surface Gravity of Some Planets Compared to the Earth**

Planet	Surface Gravity
Mercury	0.38
Venus	0.90
Earth	1.00
Mars	0.38
Jupiter	2.53

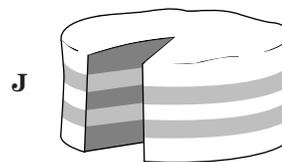
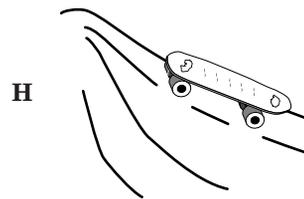
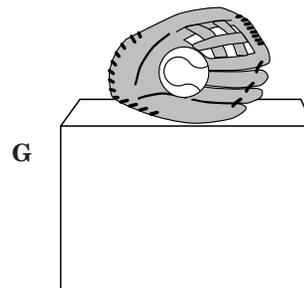
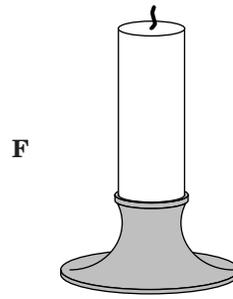
The larger the mass of a planet, the greater the pull of gravity on that planet's surface. According to the information in the chart, which of these planets has a mass closest to the Earth's mass?

- F Mercury
- G Venus
- H Mars
- J Jupiter

21 **The magnetic fields of any magnet are *greatest* —**

- A around the middle
- B around the poles
- C around only the south pole
- D around only the north pole

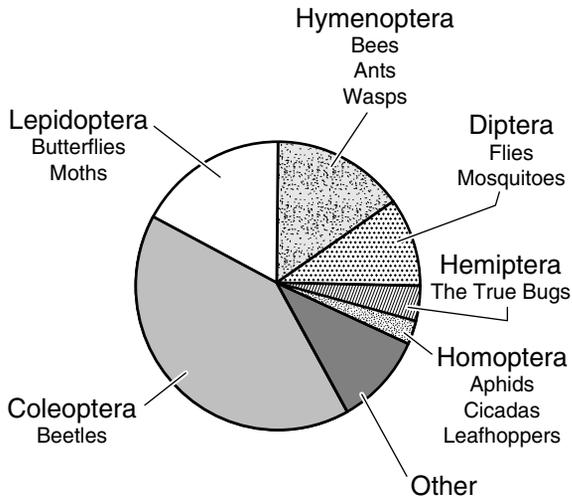
22 **Which of these best shows kinetic energy?**



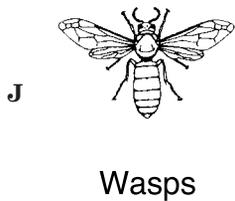
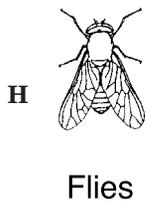
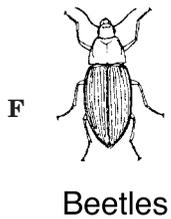
23 **Which of these is *not* considered ocean pollution?**

- A Dumping garbage
- B Artificial reefs
- C Oil spills
- D Chemical runoff

24 **Relative Numbers of Insects Seen**



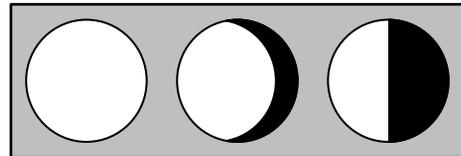
A science class went on a field trip and made a graph of the different kinds of insects that they saw. Which group of insects was seen the most?



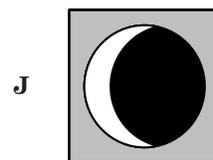
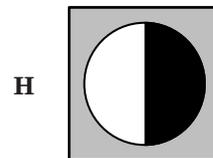
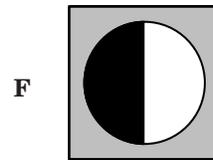
25 **Seeds can lie dormant for many years until —**

- A sunlight causes photosynthesis
- B food webs are complete
- C conditions are right for growth
- D conduction of food occurs

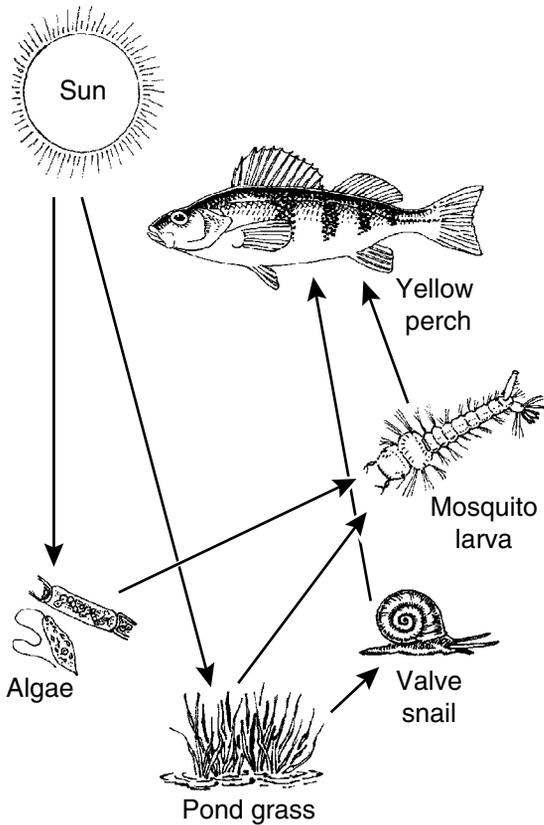
26



Which of the following is the next phase of the moon?



**Food Web**

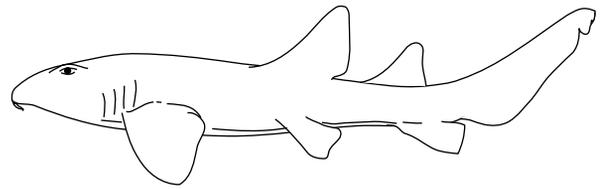


**In order for energy to flow through this food web from the sun to the yellow perch, the perch must —**

- A live in warmer areas of its habitat
- B eat pond grass and algae
- C go through the process of photosynthesis
- D eat the valve snail or the mosquito larva

**Classification Key**

- |    |                                 |                  |
|----|---------------------------------|------------------|
| 1a | Body kite-like in shape         | Ray              |
| 1b | Body not kite-like in shape     | Go to 2          |
| 2a | Nose saw-like in shape          | Swordfish        |
| 2b | Nose not saw-like in shape      | Go to 3          |
| 3a | Head extended on both sides     | Hammerhead shark |
| 3b | Head not extended on both sides | Go to 4          |
| 4a | Body has spots                  | Leopard shark    |
| 4b | Body does not have spots        | Nurse shark      |



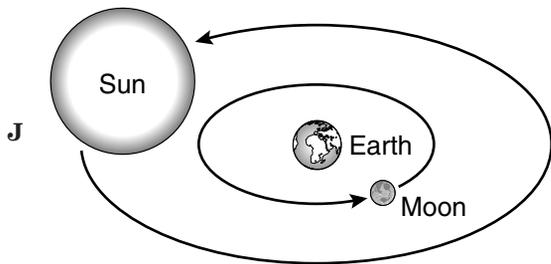
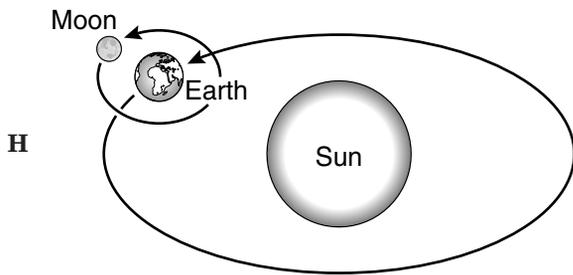
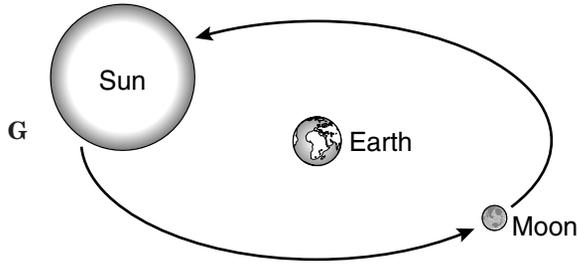
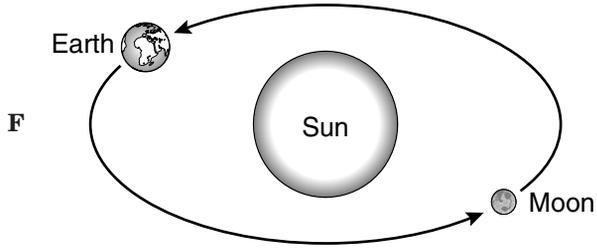
**Using the picture and classification key, what is this animal?**

- F Swordfish
- G Hammerhead shark
- H Leopard shark
- J Nurse shark

**29 One way that mosses and ferns are similar is they both —**

- A are flowering plants
- B produce spores
- C grow in areas with little rainfall
- D are dormant during the winter

30 Which of these best shows that the Earth revolves around the sun as the moon revolves around the Earth?



31 The part of a plant cell that gives the cell its green color is the —

- A nucleus
- B cytoplasm
- C vacuole
- D chloroplast

32 What tool is used to measure the relative amount of water in the air?

- F A barometer
- G An anemometer
- H A hygrometer
- J A thermometer

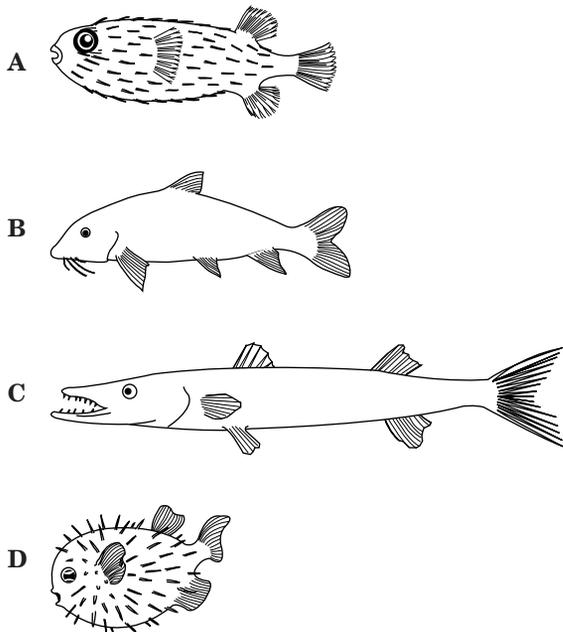
33 Blowing through a straw will produce a sound. Which straw will make the highest pitch?

- A
- B
- C
- D

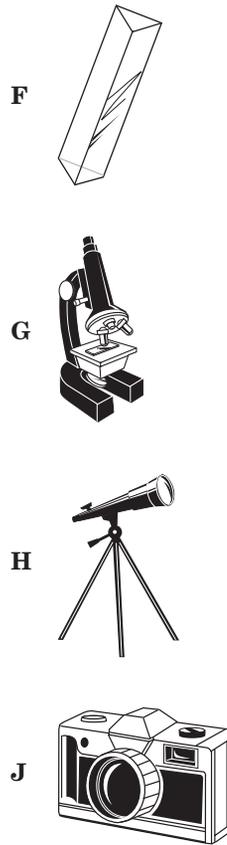
34 Trees, wild flowers, and grasses are all considered to be —

- F vascular plants
- G nonvascular plants
- H woody plants
- J nonwoody plants

35 Some fish have a streamlined body shape that allows them to move swiftly in the water. Which of these fish is probably the fastest?



36 Which tool is used to separate white light into the color spectrum?



37 Which of the following is a common plant that grows wild in Virginia?

- A Orange tree
- B Cactus tree
- C Lemon tree
- D Dogwood tree

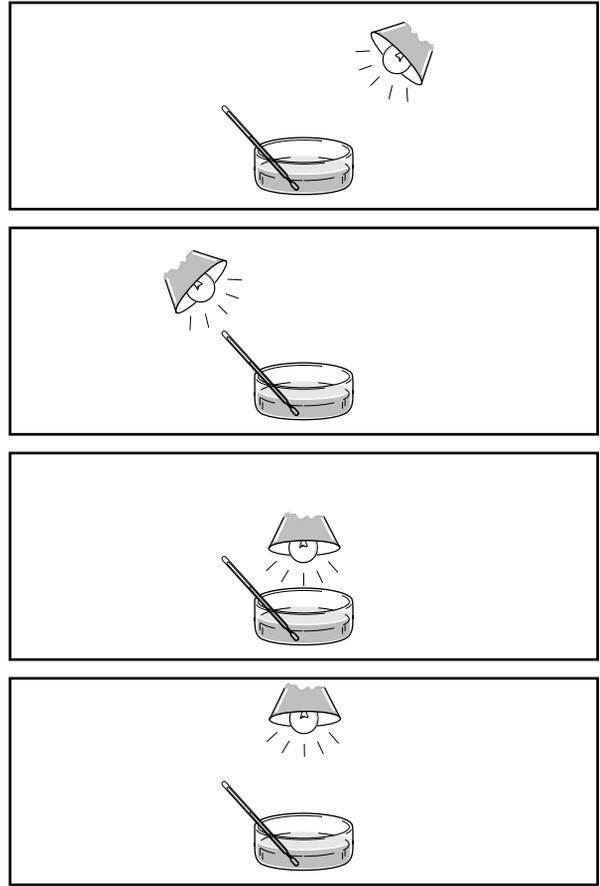
38 During a study of the human body, students are asked to observe the back of their hands and record their observations. What units would be *most* appropriate for measuring the width of their hands?

- F Grams
- G Centimeters
- H Liters
- J Meters

39 Which action can be used to prevent soil erosion?

- A Planting grass
- B Raising grazing animals
- C Digging ditches
- D Spraying with water

40



The pictures above show how one student tried to see how the heat from a light bulb affected the rate of evaporation of a liquid. What is the **only** variable being changed in this experiment?

- F The size of the container
- G The position of the thermometer
- H The position of the light bulb
- J The amount of water

## Answer Key

Test Sequence	Correct Response	Reporting Category	Reporting Category Description
1	D	018	Earth/Space Systems and Cycles
2	G	017	Life Processes and Living Systems
3	B	016	Force, Motion, Energy, and Matter
4	F	017	Life Processes and Living Systems
5	C	018	Earth/Space Systems and Cycles
6	H	015	Scientific Investigation
7	A	018	Earth/Space Systems and Cycles
8	H	016	Force, Motion, Energy, and Matter
9	D	015	Scientific Investigation
10	J	017	Life Processes and Living Systems
11	B	015	Scientific Investigation
12	F	016	Force, Motion, Energy, and Matter
13	D	016	Force, Motion, Energy, and Matter
14	F	015	Scientific Investigation
15	B	017	Life Processes and Living Systems
16	F	016	Force, Motion, Energy, and Matter
17	B	018	Earth/Space Systems and Cycles
18	J	016	Force, Motion, Energy, and Matter
19	C	015	Scientific Investigation
20	G	015	Scientific Investigation
21	B	016	Force, Motion, Energy, and Matter
22	H	016	Force, Motion, Energy, and Matter
23	B	018	Earth/Space Systems and Cycles
24	F	015	Scientific Investigation
25	C	017	Life Processes and Living Systems
26	J	018	Earth/Space Systems and Cycles
27	D	017	Life Processes and Living Systems
28	J	015	Scientific Investigation
29	B	017	Life Processes and Living Systems
30	H	018	Earth/Space Systems and Cycles
31	D	017	Life Processes and Living Systems
32	H	018	Earth/Space Systems and Cycles
33	A	016	Force, Motion, Energy, and Matter
34	F	017	Life Processes and Living Systems
35	C	017	Life Processes and Living Systems
36	F	016	Force, Motion, Energy, and Matter
37	D	018	Earth/Space Systems and Cycles
38	G	015	Scientific Investigation
39	A	018	Earth/Space Systems and Cycles
40	H	015	Scientific Investigation